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| 10/780,766 | 02/19/2004 | Junji Kondou | 2004_0157A | 2067 |

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| EXAMINER | |
|---|---|
| TIMORY, KABIR A | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/780,766 | KONDOU ET AL. | |
| | Examiner | Art Unit | |
| | Kabir A. Timory | 2611 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-3 and 5-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### Response to Arguments

1. Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of new ground(s) of rejection because of the amendment.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi et al. (US 5,765,128) in view of Shimada et al. (US 6,285,724).

**Regarding claim 1:**

As shown in figures 1- 29, Tsuboi et al. discloses a frame generating method comprising:

- inserting a synchronous word into data at a position in order to generate a frame (col 17, lines 65-67, col 18, lines 1-16), the position being determined based on a known time "t" (predetermined period is interpreted to be a known time "t") of a noise cycle of a transmission line(interface is interpreted to be transmission line) (21 in figure 4), the known time "t" of the noise cycle being a measurement of time between an occurrence of cyclical noises on the transmission line (col 17, lines 65-67, col 18, lines 1-16); and
- transmitting the generated frame from a transmitter to a receiver via the transmission line (figure 4);
- wherein the cyclical noises occur at every time "t" in the data (col 17, lines 65-67, col 18, lines 1-16).

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching and wherein a length of the synchronous word is approximately equal to a multiple of a length of the noise cycle by a natural number.

However, Shimada et al. in the same field of endeavor, teaches and wherein a length of the synchronous word is approximately equal to a multiple of a length of the noise cycle by a natural number (col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus

for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 2:**

Tsuboi et al. further discloses wherein said position is arranged according to a predetermined arrangement algorithm (code book is interpreted to be a predetermined arrangement algorithm) (col 17, lines 65-67, col 18, lines 1-16).

**Regarding claim 3:**

Tsuboi et al. further discloses wherein a parameter of the predetermined arrangement algorithm (code book is interpreted to be a predetermined arrangement algorithm) (col 17, lines 65-67, col 18, lines 1-16).

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching comprises at least one of a length of the synchronous word.

However, Shimada et al. in the same field of endeavor, teaches comprises at least one of a length of the synchronous word (col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus for decoding serial signal into information signal and communication system with the

receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 5:**

As shown in figures 1- 29, Tsuboi et al. discloses a frame generating method comprising:

- inserting a plurality of synchronous words into data at a position in order to generate a frame (col 17, lines 65-67, col 18, lines 1-16), the position being determined based on a known time "t" (predetermined period is interpreted to be a known time "t") of a noise cycle of a transmission line (interface is interpreted to be transmission line) (21 in figure 4), the known time "t" of the noise cycle being a measurement of time between an occurrence of cyclical noises on the transmission line (col 17, lines 65-67, col 18, lines 1-16); and
- transmitting the generated frame from a transmitter to a receiver via the transmission line (figure 4);
- wherein the cyclical noises occur at every time "t" in the data (col 17, lines 65-67, col 18, lines 1-16).

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching and wherein a length of each synchronous word is approximately equal to a multiple of a length of the noise cycle by a natural number.

However, Shimada et al. in the same field of endeavor, teaches and wherein a length of each synchronous word is approximately equal to a multiple of a length of the noise cycle by a natural number (col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 6:**

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching wherein said inserting a plurality of synchronous words into data arranges the plurality of synchronous words over a section of frame as long as the noise cycle.

However, Shimada et al. in the same field of endeavor, teaches wherein said inserting a plurality of synchronous words into data arranges the plurality of synchronous words over a section of frame as long as the noise cycle (33a, 33b, 31a and 31b in figure 13 and 6, col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus

for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 7:**

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching wherein a length of an arrangement interval of at least two of the plurality of synchronous words is different from a length of the noise cycle.

However, Shimada et al. in the same field of endeavor, teaches wherein a length of an arrangement interval of at least two of the plurality of synchronous words is different from a length of the noise cycle (33a, 33b, 31a and 31b in figure 13 and 6, col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 8:**

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching wherein at least two of the plurality of synchronous words are arranged using the same pattern.

However, Shimada et al. in the same field of endeavor, teaches wherein at least two of the plurality of synchronous words are arranged using the same pattern (33a, 33b, 31a and 31b in figure 13 and 6, col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

**Regarding claim 9:**

Tsuboi et al. discloses all of the subject matter as described above except for specifically teaching wherein a length of the noise cycle is the length of a time interval whose noise level in the transmission line is beyond a predetermined threshold.

However, Shimada et al. in the same field of endeavor, teaches wherein a length of the noise cycle is the length of a time interval whose noise level in the transmission line is beyond a predetermined threshold (33a, 33b, 31a and 31b in figure 13 and 6, col 1, lines 51-57).

One of ordinary skill in the art would have clearly recognized that in a communication system, in order to provide correct synchronization detection, the noise patter pulse length should be similar to the synchronization bit length. Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to use the same methodology as taught by Shimada et al. in receiving apparatus for decoding serial signal into information signal and communication system with the receiving apparatus in combination with the system and method of Tsuboi et al. to provide better error detection in the system.

***Conclusion***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kabir A. Timory whose telephone number is 571-270-1674. The examiner can normally be reached on 6:30 AM - 3:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kabir A. Timory
December 30, 2007

SHUWANG LIU
SUPERVISORY PATENT EXAMINER